

CHIROPRACTIC MANAGEMENT OF LOW BACK DISORDERS: REPORT FROM A CONSENSUS PROCESS

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ABSTRACT

Objective: Although a number of guidelines addressing manipulation, an important component of chiropractic professional care, exist, none to date have incorporated a broad-based consensus of chiropractic research and clinical experts representing mainstream chiropractic practice into a practical document designed to provide standardized parameters of care. The purpose of this project was to develop such a document.

Methods: Development of the document began with seed materials, from which seed statements were distilled. These were circulated electronically to the Delphi panel until consensus was reached, which was considered to be present when there was agreement by at least 80% of the panelists.

Results: The panel consisted of 40 clinically experienced doctors of chiropractic, representing 15 chiropractic colleges and 16 states, as well as both the American Chiropractic Association and the International Chiropractic Association. The panel reached 80% consensus of the 27 seed statements after 2 rounds. Specific recommendations regarding treatment frequency and duration, as well as outcome assessment and contraindications for manipulation were agreed upon by the panel.

Conclusions: A broad-based panel of experienced chiropractors was able to reach a high level (80%) of consensus regarding specific aspects of the chiropractic approach to care for patients with low back pain, based on both the scientific evidence and their clinical experience. (*J Manipulative Physiol Ther* 2008;31:651-658)

Key Indexing Terms: *Chiropractic; Low Back Pain; Manipulation, Spinal*

In an era where increasing health care costs weigh heavily on all industrialized countries, effective modes of conservative management that emphasize improved quality of life and self-reliance, while attempting to conserve the costly resources of medications and surgery, become critically important. In light of the burgeoning standards and volume of scientific research, the evolving chiropractic profession continues to integrate updated evidence as a key cornerstone of emerging standards of practice, as evidenced

by the Council on Chiropractic Guidelines and Practice Parameters (CCGPP) process.

The profession recognizes its responsibilities as a partner in the health care system. These begin with acknowledging that the profession exists solely to serve its patients. However, the privilege of serving patients mandates that doctors of chiropractic (DCs) act as responsible stewards by constantly striving to increase their knowledge base and to practice in an evidence-informed manner. Patients must be empowered

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All authors, independent reviewers, and panelists participated without compensation from any organization. Cleveland Chiropractic College made an in-kind contribution to the project by allowing Drs Globe and Hawk to devote a portion of their work time to this project.

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Paper submitted April 29, 2008; in revised form July 2, 2008; accepted September 8, 2008.

0161-4754/\$34.00

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doi:10.1016/j.jmpt.2008.10.006

with choice in their health care and encouraged to become more self-directed and self-reliant. The chiropractic profession acknowledges its obligation to work ethically and responsibly with other stakeholders in the health care delivery system. Chiropractors can serve as crucial members of an interprofessional team dedicated to achieving comprehensive solutions to the complex problems confronting the health care system today.

Chiropractic, as a profession dedicated to science-based, conservative health care approaches, is, like medicine, osteopathy, and other health professions, more than a singular therapeutic procedure. Although spinal manipulation/mobilization is an important treatment tool in the chiropractic therapeutic armament, it is but one of many clinical options chiropractic doctors provide to their patients. Chiropractic doctors typically serve as portal of entry providers focused primarily, although not exclusively, on neuromusculoskeletal disorders. They serve, at other times, as specialists who either assume primary provider status or as co-managers with other clinicians. They use standard approaches to assess patient needs, including evaluation and management services, orthopedic, neurologic and other common physical examination procedures, specialized assessment approaches, and a wide variety of common diagnostic studies including radiography, laboratory diagnostics, and neurodiagnostics, among others. Doctors of chiropractic provide conservative, often “hands on” treatment, including, but not limited to, manual techniques such as manipulation and mobilization, commonly used physiologic therapeutic modalities, exercise, counseling on ergonomics, and also patient education to include diet and lifestyle advice, coping strategies, and self-care approaches. Chiropractic doctors are trained to diagnose and make referrals to other health care practitioners when appropriate, and they frequently engage in co-management and referral for the variety of the conditions they encounter.¹

Significant research regarding chiropractic care has been directed to disorders of the thoracolumbar, lumbosacral, and pelvic regions, generically known as the “low back.” A number of guidelines addressing manipulation, an important component of chiropractic professional care, have been released over the past 15 years. These efforts have admirably served the goal of enhancing the effectiveness of care. Despite these prior efforts, none have incorporated a broad-based consensus of chiropractic research and clinical experts representing mainstream chiropractic practice into a practical document designed to provide standardized parameters of care.

The Scientific Commission of the CCGPP recently completed a thorough synthesis of the available literature regarding chiropractic treatment of low back disorders. The following is a summary of conclusions from this document:²

Spinal manipulation/mobilization:

1. For acute and subacute low back pain (LBP), strong evidence supports the use of spinal manipulation to reduce symptoms and improve function.

2. There is good evidence that the use of exercise in conjunction with manipulation is likely to speed and improve outcomes as well as minimize episodic recurrence.
3. There is fair evidence for the use of manipulation for patients with LBP and radiating leg pain, sciatica, or radiculopathy; manipulation in combination with other common forms of therapy may be of clinical value.
4. Cases with high severity of symptoms may benefit by referral for co-management of symptoms with medication.
5. For chronic LBP, strong evidence supports the use of spinal manipulation/mobilization to reduce symptoms and improve function.

Exercise:

1. For acute LBP, there is evidence that exercises are not more effective than other conservative interventions.
2. For subacute LBP, moderate evidence supports use of a graded-activity exercise program in occupational settings, although the effectiveness for other types of exercise therapy in other populations is unclear.
3. In chronic LBP, there is strong evidence that exercise is at least as effective as other conservative treatments. Individually designed strengthening or stabilizing programs appear to be effective in health care settings.

The CCGPP Low Back document along with other systematic reviews and studies provide a strong collective evidence-influenced context upon which the following recommendations are based. The Delphi consensus process was selected as an established and appropriate methodology for translating the literature synthesis into reasonable practice recommendations.^{3,4}

METHODS

Development of the document began with seed materials, from which seed statements were distilled. These were circulated electronically to the Delphi panel until consensus was reached. Details of the process are described below.

Seed Document Identification

Seed documents were collected for distribution to the Delphi panelists as background material. The full texts of the following documents were provided to all Delphi panelists: the CCGPP Low Back literature synthesis,² the clinical practice guidelines on low back pain from the American College of Physicians and the American Pain Society,⁵ and the 2008 “Evidence-informed management of chronic low back pain with spinal manipulation and mobilization” article in the *Spine Journal*.⁶

Seed Statement Development

Seed statements were developed by a separate committee, addressing treatment frequency, intensity, and duration of chiropractic care for acute and chronic LBP, process of care, documentation of therapeutic response, consideration of complicating factors, safety considerations, and other aspects of appropriate chiropractic practice. The seed document committee was appointed by the CCGPP Executive Committee, based on clinical experience, knowledge of the scientific literature, and experience in preparing documents. Representatives of the CCGPP Scientific Commission also reviewed and critiqued the seed statements, as independent reviewers, and the document was revised as per their comments before circulation to the Delphi panel.

Selection and Composition of the Delphi Panel

The CCGPP asked the Congress of Chiropractic State Associations and other interested stakeholders including all chiropractic professional organizations to submit nominations for members from the field. Representation of all stakeholders was felt to be essential. Efforts were made to include a broad representation of the profession in terms of chiropractic college of graduation, geographic location, practice characteristics (such as chiropractic technique and use of modalities and other ancillary procedures), and spectrum of practice, from broad scope to focused scope, as described in the survey of the chiropractic profession by MacDonald et al.⁷ A public representative was also invited to participate in the process. Multidisciplinary input was encouraged. A selection committee, composed of representatives of the CCGPP and the Scientific Commission, reviewed nominations to ensure that the panelists were highly experienced in clinical practice and represented a broad spectrum of US DCs.

Method for Conduct of Delphi Rounds

The Delphi process followed established methodology^{4,8} and was conducted in early 2008, as follows:

The project director, Chair of the Scientific Commission of CCGPP, conducted Delphi rounds by electronic mail. The RAND/UCLA method for rating appropriateness was used, as follows:⁹ for each of 27 seed statements, panelists were asked to indicate the appropriateness of the procedure or practice described. "Appropriateness" indicated that the expected health benefit to the patient exceeds the expected negative consequences by a sufficiently wide margin that it is worth doing, exclusive of cost.⁹ A scale of 1 to 9 (highly inappropriate to highly appropriate) was provided, where 1 to 3 were scored as "inappropriate," 4 to 6 as "undecided," and 7 to 9 as "appropriate." Panelists were instructed to provide specific reasons for "inappropriate" ratings, providing a citation from the peer-reviewed literature to support it, if such exists. In analyzing the responses, agreement on appropriateness was considered to be present if at least 80%

of panelists marked 7, 8, or 9 and the median response score was 7 to 9.

RESULTS

Delphi Panel Composition

The group included clinically experienced DCs from across the nation as well as content experts and recognized academic/research experts in LBP. Of 51 nominees from organizations and institutions, the selection committee approved 47 and 7 declined to participate, for a total of 40 panelists, who graduated from 15 different chiropractic colleges (there were no graduates of Palmer Davenport or Life West) practicing in 16 states (California, Colorado, Florida, Georgia, Idaho, Illinois, Massachusetts, Minnesota, Missouri, New Jersey, New Mexico, New York, Pennsylvania, South Dakota, Texas, Wisconsin). Most (22) practice in suburban locations, but rural and urban, were also represented. Professional organization affiliations included the American Chiropractic Association (18), International Chiropractic Association (4), American Public Health Association (4), and International Chiropractic Pediatric Association (1). The median years in practice was 22.5 (5-40 years). Median practice volume was 115 patient visits per week (10-350 visits per week). Most panelists are in private practice, although there were also clinical and academic faculty and 3 scientific representatives who are no longer in active practice. Although most panelists primarily use traditional manual techniques, there was representation of instrument- and table-assisted techniques, as well as less commonly used techniques such as sacro-occipital and torque release. Soft tissue techniques such as myofascial release were also commonly reported. For scope of practice, where 1 indicates broad scope and 9 indicates focused scope, there were panelists ranging from 1 to 9, with a median of 2.

Results of Delphi Rounds

For the first Delphi round, 27 seed statements were sent to the 40 panelists. Thirty-nine of 40 responded, after 4 email reminders. The median ratings were within the "appropriate" category, with 80% agreement, for 24 statements. For 3 statements, the median ratings were in the appropriate category, but there was only approximately 70% agreement, which fell short of the 80% established at the outset as the requirement for consensus. All panelists' comments and ratings were sent to the seed document committee, who provided the panel with explanatory discussion and revision for the 3 statements on which there was no consensus. This, along with all panelists' comments, was sent back to the panelists for additional deliberation.

On the second round, 36 of 40 panelists responded, after 4 reminders, with median ratings in the appropriate category

and 80% agreement. Consensus was therefore considered to have been reached, and no additional Delphi rounds were conducted. All comments and ratings were sent to the seed document committee to consider when developing this document, based on the seed statements.

DISCUSSION

The current document incorporates the consensus-based seed statements with additional explanatory material.

General Considerations

The findings of the CCGPP literature synthesis particularly support, although clinical practice is not limited to, the use of manual therapeutic techniques (such as manipulation and mobilization procedures), patient education regarding reassurance, staying active and avoiding illness behavior, and also rehabilitative exercise as the therapeutic basis for care for low back conditions. It is also important to note that the CCGPP recommendations in support of manipulation for both acute and chronic low back pain closely mirror many other systematic reviews of the literature. For example, Bronfort et al⁶ have also recently concluded that manual therapeutic methods, such as spinal manipulation and mobilization methods, combined with active care/exercises have been shown to be effective in the management of chronic back pain.

The current document is intended to further define and clarify the clinical application of research from a chiropractic evidence-influenced perspective, using a consensus process with a national panel of chiropractic clinical experts.

Most acute pain, typically the result of injury (micro- or macrotrauma), responds to a short course of conservative treatment. If effectively treated at this stage, patients often recover with full resolution of pain, although recurrences are common. Delayed or inadequate early clinical management may result in increased risk of chronicity and disability. Furthermore, those responding poorly in the acute stage and those with increased risk factors for chronicity must also be identified as early as possible.

Clinicians must continually be vigilant for the appearance of clinical red flags (see clinical red flags section below) that may arise at any point during patient care. In addition, biopsychosocial factors (also known as clinical yellow flags) should be identified and addressed as early as possible as part of a comprehensive approach to clinical management.

Chiropractic doctors are skilled in multiple approaches of functional assessment and treatment. Depending on the clinical complexity, DCs can work independently or as part of a multidisciplinary team approach to functional restoration of patients with acute and chronic low back pain.

Finally, it is the ultimate goal of chiropractic care to improve patients' functional capacity and educate them to independently accept the responsibility for their own health. In an era of costly health care, the greatest savings can be realized by keeping healthy patients out of doctor's offices and allowing limited health care resources to be used by those truly in need of them.

Informed Consent

Informed consent is the process of proactive communication between a patient and physician that results in the patient's authorization or agreement to undergo a specific medical intervention. Informed consent should be obtained from the patient, performed within the local and/or regional standards of practice.

Examination Procedures

Thorough history and evidence-informed examination procedures are critical components of chiropractic clinical management. These procedures provide the clinical rationale for appropriate diagnosis and subsequent treatment planning. The review of evidence-informed examination procedures is beyond the scope of this document. The reader is advised that there are many excellent sources of evidence-based information by which to conduct a thorough and well-informed examination of the injured low back patient.

Severity and Duration of Conditions

Conditions of illness and injury are typically classified by severity and/or duration. Common descriptions of the stages of illness and injuries are acute, subacute, chronic, and recurrent, and further subdivided into mild, moderate, and severe.⁵

- *Acute*—symptoms persisting for less than 6 weeks.
- *Subacute*—symptoms persisting between 6 and 12 weeks.
- *Chronic*—symptoms persisting for at least 12 weeks' duration.
- *Recurrent/flare-up*—return of symptoms perceived to be similar to those of the original injury at sporadic intervals or as a result of exacerbating factors.

Treatment Frequency and Duration

Although most patients respond within anticipated timeframes, frequency and duration of treatment may be influenced by individual patient factors or characteristics that present as barriers to recovery (eg, comorbidities, clinical yellow flags). Depending on these individualized factors, additional time and treatment may be required to

observe a therapeutic response. The therapeutic effects of chiropractic care/treatment should be evaluated by subjective and/or objective assessments after each course of treatment (see Outcome Measurement).

Recommended therapeutic trial ranges are representative of typical care parameters. A typical initial therapeutic trial of chiropractic care consists of 6 to 12 visits over a 2- to 4-week period, with the doctor monitoring the patient's progress with each visit to ensure that acceptable clinical gains are realized.

For acute conditions, fewer treatments may be necessary to observe a therapeutic effect and to obtain complete recovery. Chiropractic management is also recommended for various chronic low back conditions where repeated episodes (or acute exacerbations) are experienced by the patient, particularly when a previous course of care has demonstrated clinical effectiveness and reduced the long-term use of medications.

Initial Course of Treatments for Low Back Disorders

The treatment recommendations that follow (Table 1), based on clinical experience combined with the best available evidence, are posited for the "typical" patient and do not include risk stratification for complicating factors.

An initial course of chiropractic treatment typically includes 1 or more "passive" (ie, non-exercise) manual therapeutic procedures (ie, spinal manipulation or mobilization) and physiotherapeutic modalities for pain reduction, in addition to patient education designed to reassure and instill optimal concepts for independent management. The initial visits allow the doctor to explain that the clinician and the patient must work as a proactive team and to outline the patient's responsibilities. Although passive care methods for pain or discomfort may be initially emphasized, "active" (ie, exercise) care should be increasingly integrated to increase function and return the patient to regular activities.

Reevaluation and Reexamination

A detailed or focused reevaluation designed to determine the patient's progress and response to treatment should be conducted at the end of each trial of treatment.

In addition, a brief assessment of the patients response to treatment should be noted after each treatment is completed, and recorded in the progress notes (ie, SOAP notes). A patient's condition should be monitored for progress with each visit. Near the midway point of a trial of care (ie, end of the second week of 4-week trial), the practitioner should reassess whether the current course of care is continuing to produce satisfactory clinical gains using commonly accepted outcomes assessment methods (see Outcome Measurement).

When a patient begins to demonstrate a delay in expected progress (ie, stalled functional gains), the DC should reassess and consider other clinically appropriate options (ie, other

Table 1. Frequency and duration for initial (trial) course of chiropractic treatments

| Stage of condition | Frequency | Duration (wk) | Reevaluate after (wk) |
|--------------------|-------------|---------------|-----------------------|
| Acute | 3× weekly | 2-4 | 2-4 |
| Subacute | 3× weekly | 2-4 | 2-4 |
| Chronic | 2-3× weekly | 2-4 | 2-4 |
| Recurrent/flare-up | 1-3× weekly | 1-2 | 1-2 |

chiropractic methods, outside referral/treatment, diagnostic testing, and co-management).

A separate reexamination procedure should be performed at the end of the trial of care or in the event of an unexpected, significant change in the patient's condition. Patients who fail to achieve measurable gains should be considered for a modified treatment plan, additional diagnostic evaluation and/or specialist referral, co-management, or an alternative therapeutic approach. As with the other health care disciplines, there are chiropractic physicians with additional postgraduate training and board certifications who may be optimal choices for consultation, referral, or perhaps co-management of cases.

After an initial course of treatment has been concluded, a detailed or focused reevaluation should be performed. The purpose of this reevaluation is to determine whether the patient has made clinically meaningful improvement. A determination of the necessity for additional treatment should be based on the response to the initial trial of care and the likelihood that additional gains can be achieved.

As patients begin to plateau in their response to treatment, further care should be tapered or discontinued depending on the presentation. A reevaluation is recommended to confirm that the condition has reached a clinical plateau or has resolved. When a patient reaches complete or partial resolution of their condition and all reasonable treatment and diagnostic studies have been provided, then this should be considered a final plateau (maximal therapeutic benefit). The DC should perform a final examination to verify that maximum therapeutic benefit has been achieved and provide any necessary patient education and instructions in effective future self-management.

Continuing Course of Treatments

If the criteria to support continuing chiropractic care (substantive, measurable functional gains with remaining functional deficits) have been achieved, a follow-up course of treatment may be indicated. However, one of the goals of any treatment plan should be to reduce the frequency of treatments to the point where maximum therapeutic benefit continues to be achieved while encouraging more active self-therapy, such as independent strengthening and range of motion exercises, and rehabilitative exercises. Patients also need to be encouraged to return to usual activity levels

Table 2. Frequency and duration for continuing courses of treatments

| Stage of condition | Frequency | Duration (wk) | Reevaluate after (no. of treatments) |
|---------------------|-------------|---------------|--------------------------------------|
| Acute | 2-3× weekly | 2-4 | 4-12 |
| Subacute | 2-3× weekly | 2-4 | 4-12 |
| Chronic | 1-3× weekly | 2-4 | 2-12 |
| Recurrence/flare-up | 1-3× weekly | 1-2 | 1-6 |

despite residual pain, as well as to avoid catastrophizing and overdependence on physicians, including DCs. They need to be reassured that, “hurt is not the same thing as harm.” The frequency of continued treatment generally depends on the severity and duration of the condition.

Upon completion of the initial trial of care, if the appropriate criteria have been met, the following parameters of continued treatment are recommended, based on clinical experience combined with the best available evidence (Table 2). When the patient’s condition reaches a plateau, or no longer shows ongoing improvement from the therapy, a decision must be made on whether the patient will need to continue treatment. Generally, progressively longer trials of therapeutic withdrawal may be useful in ascertaining whether therapeutic gains can be maintained absent treatment.

Additional Care

In a case where a patient reaches a clinical plateau in their recovery (maximum therapeutic benefit) and has been provided reasonable trials of interdisciplinary treatments, additional chiropractic care may be indicated in cases of exacerbation/flare-up, or when withdrawal of care results in substantial, measurable decline in functional or work status.

Additional chiropractic care may be indicated in cases of exacerbation/flare-up in patients who have previously reached MTB, if criteria to support such care (substantive, measurable prior functional gains with recurrence of functional deficits) have been established.

Outcome Measurement

For a trial of care to be considered beneficial, it must be substantive, meaning that a definite improvement in the patient’s functional capacity has occurred. Examples of measurable outcomes and activities of daily living and employment include:

1. Pain scales such as the visual analog scale and the numeric rating scale.
2. Pain diagrams that allow the patient to demonstrate the location and character of their symptoms.
3. Validated activities of daily living measures, such as the Oswestry Back Disability Index and the Roland Morris

Fig 1. Contraindications for high-velocity manipulation to the lumbar spine (red flags).

- Osseous conditions
 - Region of local unstable fractures
 - Severe osteoporosis
 - Multiple myeloma
 - Osteomyelitis
 - Local primary bone tumors where osseous integrity is in question
 - Local metastatic bone tumors
 - Paget’s disease
- Neurologic conditions
 - Progressive or sudden (i.e. cauda equine syndrome) neurologic deficit
 - Spinal cord tumors that clinically demonstrate neurological compromise or require specialty referral. In cases where the neoplasm has been properly assessed and is considered to be clinically quiescent and/or perhaps distant to therapeutic target site, then chiropractic manipulative therapy may be utilized.
- Inflammatory conditions
 - Rheumatoid arthritis in the active systemic, stage, or locally in the presence of inflammation or atlantoaxial instability.
 - Inflammatory phase of ankylosing spondylitis
Inflammatory phase of psoriatic arthritis
Reactive arthritis (Reiter’s syndrome)
- Bleeding disorder
 - Unstable congenital bleeding disorders, typically requiring specialty co-management
 - Unstable acquired bleeding disorders, typically requiring specialty co-management
 - Unstable abdominal aortic aneurysm
- Other
 - Structural instability (e.g., unstable spondylolithesis)
 - Inadequate physical examination
 - Inadequate manipulative training and skills

*Under certain procedures soft tissue low velocity, low amplitude or mobilization procedures may still be clinically reasonable and safe.

Back Disability Index, RAND 36, Bournemouth Disability Questionnaire.

4. Increases in home and leisure activities, in addition to increases in exercise capacity.
5. Increases in work capacity or decreases in prior work restrictions.
6. Improvement in validated functional capacity testing, such as lifting capacity, strength, flexibility, and endurance.

Spinal Range of Motion Assessment

Range of motion is commonly used by practitioners for a variety of reasons. It has not been shown to be a valid functional outcome measure; however, it may be used as part of determining an impairment rating or to determine whether a patient responded positively to a single treatment session.

Cautions and Contraindications

Chiropractic care, including patient education, passive and active care therapy, is a safe and effective form of health care for low back disorders. There are certain clinical situations where high-velocity, low-amplitude manipulation or other manual therapies may be contraindicated. It is incumbent upon the treating DC to evaluate the need for care and the risks associated with any treatment to be applied. Many contraindications are considered relative to the location and stage of severity of the morbidity, whether there is co-management with 1 or more specialists, and the therapeutic methods being used by the chiropractic physician.

Contraindications for High-Velocity Manipulation Techniques on the Lumbar Spine (Red Flags). Figure 1 summarizes injuries or pathologic conditions that present contraindications for high-velocity manipulation to the lumbar spine.

Conditions Contraindicating Certain Chiropractic-Directed Treatments Such as Spinal Manipulation and Passive Therapy

Generally the procedure or therapy is contraindicated over the relevant anatomy and not necessarily contraindicated for other areas:

- Local open wound or burn
- Prolonged bleeding time/hemophilia
- Artificial joint implants
- Pacemaker (contraindicated modality—electrotherapy)
- Joint infection
- Tumors/cancer
- Recent/healing fracture
- Increasing neurologic deficit.

Conditions Requiring Co-Management

- Cancer pain
- Postoperative surgical pain

Conditions Requiring Referral

Patients should be referred to another specialty health care practitioner or to emergency care in certain instances, such as the following:

- The patient's condition is not responding to the treatment rendered, when all reasonable alternative chiropractic methods have been exhausted.
- The patient's condition is worsening with treatment.
- The patient has a serious and/or progressive infectious condition.
- The patient experiences a medical emergency (eg, myocardial infarct, cerebrovascular accident, severe laceration, pneumothorax).
- Increasing neurologic deficits (ie, cauda equina syndrome).

CONCLUSION

A broad-based panel of experienced chiropractors were able to reach a high level (80%) of consensus regarding specific aspects of the chiropractic approach to care for patients with low back pain, based on both the scientific evidence and their clinical experience.

ACKNOWLEDGMENT

The authors thank Alan Adams, DC, MS, MSED, for consulting on the design of the Delphi process and Janet P. Jordan, CAE, for ensuring that the nomination information for Delphi panelists was disseminated widely and that the nominations were collected efficiently. The independent reviewers, listed below, provided rigorous and constructive criticism during development of the seed document. Finally, the Delphi panelists, listed below, generously provided their expertise and clinical judgment, without which this project could not have been accomplished. The authors also thank the independent reviewers:

Gert Bronfort, DC, PhD; Jeffrey R. Cates, DC, MS; Mark D. Dehen, DC; Meridel I. Gatterman, MA, DC, Med; Dana J. Lawrence, DC, MMedEd; Eugene A. Lewis, DC, MPH; William C. Meeker, DC, MPH; Stephen M. Perle, DC, MS; Michael J. Schneider, DC; Thomas Souza, DC; Lawrence H. Wyatt, DC.

The work of the Delphi panelists is also appreciated: Randall M. Adams, DC, MS; Gregory Baker, DC; Charles L. Blum, DC; Jeffrey Bonsell, DC; Richard Branson, DC; Gert Bronfort, DC, PhD; Wayne H. Carr, DC; Jarrod M. Cashion, DC; Joseph J. Cipriano, DC; Edward Cremata, DC; J. Donald Dishman, DC, MSc; Gregory H. Doerr, DC; Paul E. Dougherty, DC; John W. Downes, DC; Vernon E. Englund, DC; Joseph F. Ferstl, DC; Scott D. Fonda, DC; Meridel I. Gatterman, MA, DC, Med; Michael W. Hall, DC; Wayne A. Hogan, DC; Kathryn T. Hoiriis, DC; Lawrence Humberstone, DC; Brian Justice, DC; Davis L. Kinney, DC; William J. Lauretti, DC; Steven Lindner, DC; Vincent F. Loia, DC; Marshall T. Lysne, DC; Robert T. Martin, DC; Glen Nykwist, DC; Ian Paskowski, DC; Reed B. Phillips, DC, PhD; Jeremy S. Rowse, DC; Brad M.T. Smith, DC; Albert Stabile, Jr, DC; Michael S. Swank, DC; Quentin Thompson, DC; John M. Ventura, DC; James A. Wyllie, DC.

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