

Chiropractic Management of Low Back Disorders

Council on Chiropractic Guidelines and Practice Parameters

The Council on Chiropractic Guidelines and Practice Parameters (CCGPP), was formed in 1995 by the Congress of Chiropractic State Associations (COCSA) with assistance from the American Chiropractic Association, Association of Chiropractic Colleges, Council on Chiropractic Education, Federation of Chiropractic Licensing Boards, Foundation for the Advancement of Chiropractic Sciences, Foundation for Chiropractic Education and Research, International Chiropractors Association, National Association of Chiropractic Attorneys and the National Institute for Chiropractic Research. The charge to the CCGPP was to create a chiropractic “best practices” document. CCGPP was delegated to examine all existing guidelines, parameters, protocols and best practices in the United States and other nations in the construction of this document.

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Introduction

In an era where increasing healthcare 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 (D.C.) act as responsible stewards by constantly striving to increase their knowledge base and to practice in an evidence-informed manner. Patients must be empowered 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 inter-professional team dedicated to achieving comprehensive solutions to the complex problems confronting the health care system today.

The CCGPP, an organization with broad representation from a variety of chiropractic stakeholder organizations, recently completed a thorough synthesis of the available literature regarding chiropractic treatment of low back disorders. The literature synthesis was the foundation for this consensus document. This document reflects the chiropractic perspective on chiropractic management of low back disorders, based on both the scientific evidence and, where that evidence is insufficient, the professional expertise of a broad spectrum of D.C.'s.

A number of guidelines addressing manipulation, an important component of chiropractic professional care, have been released over the past fifteen 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.

Chiropractic, as a profession dedicated to science-based, conservative healthcare approaches, is, like medicine, osteopathy and other health professions, more than a singular therapeutic procedure. While 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 employ standard approaches to assess patient needs, including evaluation and management

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services, orthopedic, neurological 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 healthcare 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’. The previous chapters of 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.^{2,3}

Delphi Process Evaluation of Chiropractic Management of Low Back Conditions: Rationale

Over the last few years many of you have heard the cries of our fellow chiropractic practitioners in California over the revisions in their Workers Compensation system. In 2004 the California legislature adopted the American College of Occupational and Environmental Medicine (ACOEM) guidelines for use in that system. Only those interventions recommended in the ACOEM guidelines are now reimbursable under California law. The only exception available under this law is that the ACOEM guidelines may be supplemented by other nationally published guidelines.

In December of 2007 Gary Globe, DC, MBA, PhD, who is serving as the California Chiropractic Association (CCA) representative on the California Workers Compensation Advisory Board, contacted the CCGPP for assistance. Dr. Globe indicated that there was a brief window of opportunity for the chiropractic profession to provide a nationally published supplemental guideline to clarify weaknesses in the ACOEM guidelines as it pertains to chiropractic care for low back and chronic pain conditions. However, for this opportunity to be realized, that supplement had to be available for the next regularly scheduled meeting of the California Workers Compensation Advisory Board on March 19, 2008.

The CCGPP at its inception was charged with the evaluation of any guidelines, parameters, protocols, best practices, and standards of practice. This also means taking a stand for the profession when a problem or potential assault is noted.

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Therefore, the CCGPP accepted the California challenge and has undertaken a new initiative. We utilized a Delphi process to generate consensus opinion of Doctors of Chiropractic from across the country regarding the care of low back pain, especially chronic pain. After conducting its extensive literature synthesis on low back conditions initially posted on the Internet in May of 2006, the CCGPP is acutely aware that there is inadequate literature on various areas of common chiropractic practice. Many of those studies that do exist have a medical bias that needs to be tempered with a chiropractic lens, as provided by the CCGPP's team of low back experts.

The purpose of the Delphi process is to elicit information and judgments from participants to facilitate problem-solving, planning, and decision-making. It is structured to capitalize on the merits of group problem-solving and minimize the liabilities of group problem-solving. Consensus derived from a rigorous Delphi process is considered to be expert evidence, and while not as highly valued as some forms of research, it is nevertheless widely used and accepted, particularly in addressing areas where high quality research is lacking. Indeed, other national guidelines have used medical expert opinion to address issues of chiropractic care when more definitive literature was not available. The purpose of the CCGPP's Delphi process was to look at the same literature base others have, through a chiropractic expert perspective.

Therefore, this Delphi process was utilized in an effort to clarify the role of chiropractic in these areas of care, especially as they are impacted by the Workers Compensation system and their incorporation of external guidelines, e.g. ACOEM, ODG, etc. CCGPP solicited seed panelists from chiropractic's national organizations, e.g. ACA, ICA, etc., and from the state associations through COCSA. These 39 panelists were all actively involved in chiropractic practice from across the country with a diverse variety of philosophy, technique and practice situations. As background material, those panelists were provided the CCGPP's Low Back literature synthesis, along with Dr. Gert Bronfort's recent study published in the Spine Journal.

After reviewing the ACOEM guidelines, the CCGPP's Seed Committee then developed 27 seed statements defining areas of concern within those guidelines. Those seed statements were then submitted to the panel for review and comment. After the first round of review, there was greater than 80% consensus on 24 of the 27 seed statements. On the 3 outstanding seed statements, the panelist's comments were reviewed by the Seed Committee and utilized to revise those statements. Those revised seed statements were then submitted to the panelists for a second round of review and comment. After the second round, the 3 remaining outstanding seed statements again achieved greater than the 80% threshold for consensus that the Seed Committee had required at the outset of the project.

The Seed Committee has incorporated the acquired commentary into the final consensus report, entitled "**Chiropractic Management of Low Back Disorders**", available below. The *Journal of Manipulative and Physiological Therapeutics* will be publishing the available literature syntheses chapters, inclusive of this consensus report, in the November/December 2008 issue.

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CCGPP has studiously avoided entering into the “guidelines” development process for a number of years, especially following the furor raised over the “Mercy” guidelines. They were widely condemned, particularly by those who never took the time to read them or learn how to properly apply them to obtain the care their patients needed. However, “Mercy” was a long time ago, given the pace of change in health care over the last decade and a half, and the literature needed to be updated. Third party payors, government agencies, other guideline organizations, patients, and yes, even DC’s now want to know what kind of care is supported by evidence.

Our profession’s refusal to address this issue has led to the inevitable result that MD’s, insurers and bureaucrats are now deciding what reasonable chiropractic care should be, based on their interpretation of the currently available scientific literature. We must remember that we exist as a profession to provide a service our patients need and want and not to advocate for what is best for our own benefit. Need proof? Our market share has not increased (and some would argue it has declined) despite the greatest increase in the use of CAM in recent history. We continue to have little cultural authority, meaning in part that the public still does not clearly understand our role and areas of expertise in the health care market. Physical therapists are publishing widely accepted papers on indications for manipulation of the low back, and have made it clear that they intend to take over chiropractic’s traditional place in the health care market.

The good news is that there is a great deal of evidence for what we do, as revealed by the CCGPP Low Back Literature Synthesis, as well as the subsequent CCGPP condition related chapters. The crisis in California has provided an opportunity to address what many of us consider to be mis-interpretation of the scientific literature, and to instead re-interpret the scientific literature viewed through a chiropractic lens. This Delphi process was in part developed by the CCGPP in response to what we heard at COCSA in Baltimore in 2006, where one of the primary concerns voiced by our critics during our round table discussion was that not every aspect of chiropractic practice had yet been subjected to randomized controlled trials.

Now some of those same critics have already begun to naively criticize this effort as “unscientific.” Nothing could be further from the truth. CCGPP conducted a multi-year, scientific evaluation of the current literature based on internationally accepted standards and resulting in the aforementioned Low Back Literature Synthesis. We also included additional, newly released research, published in interim since the completion of the Low Back Literature Synthesis. This formed the framework for the subsequent Delphi consensus process, which is widely viewed as an appropriate, defensible and scientific methodology for addressing areas where scientific literature is lacking.

The issue of “dosage” is a perfect example of the need for a scientific consensus process. Patients, insurers, DC’s and others want to know what reasonable parameters of chiropractic care are for a given condition. Most published literature on this subject is based on treatment restrictions which do not realistically reflect actual practice, but reflect limitations imposed by clinical study protocols. Accordingly, the most appropriate

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and valid methodology for addressing the gaps between scientific studies and clinical practice is a rigorous consensus process. We chose to use the Delphi process because of its economy in terms of both costs and timeliness. We chose to ask every state association and national organization in the country, through the Congress of Chiropractic State Associations (COCSA), to provide participants who were conversant with using published literature, represented a wide variety of practice styles, philosophies and locals, and who were willing to work collegially to try to reach accord.

Is the end result what we wanted? No, if the goal was the ability of the individual chiropractor to practice unfettered by any constraints (and we are unaware of any other health care profession with such a privilege). But if the goal was to draft a guideline which reflects the mainstream of chiropractic practice, provides advice and benchmarks for extending trials of treatment, and most importantly safeguards our patients' rights to demonstrably effective, conservative chiropractic care, then we believe this is a good start.

We anticipate that this type of consensus process will eventually have national impact, as New York, Ohio and other states are also incorporating the ACOEM or other guidelines into their Workers Compensation systems.

Delphi Consensus Process Summary

The Delphi process followed established methodology^{3,4} and was conducted in early 2008, as follows:

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,⁵ the clinical practice guidelines on low back pain from the American College of Physicians and the American Pain Society,⁶ and the 2008 "Evidence-informed management of chronic low back pain with spinal manipulation and mobilization" article in the *Spine Journal*.⁷

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, and the document was revised as per their comments prior to circulation to the Delphi panel.

Selection and Composition of the Delphi Panel

The CCGPP asked the Congress of Chiropractic State Associations (COCSA) 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 and spectrum of practice, from broad scope to focused scope, as described in the survey of the chiropractic profession by MacDonald and colleagues.⁸ The group included clinically experienced DCs from across the nation, as well as content experts and recognized academic/research experts in LBP. 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 U.S. D.C.'s.

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), practice in 16 states (CA, CO, FL, GA, ID IL MA, MN, MO, NJ, NM, NY, PA, SD, TX WI). Most (22) practice in suburban locations, but rural and urban were also represented. The median years in practice was 22.5 (5-40). Median practice volume was 115 patient visits/week (10-350). The majority of 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 1-9, with a median of 2.

Method for Conduct of Delphi Rounds

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 in this process, 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 1-9 (highly inappropriate to highly appropriate) was provided, where 1-3 were scored as "inappropriate;" 4-6 as "undecided;" and 7-9 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 7-9.

Results of Delphi Rounds

For the first Delphi round, 27 seed statements were sent to the 40 panelists. Thirty-nine of 40 responded, after four email reminders. The median ratings were within the “appropriate” category, with 80% agreement, for 24 statements. For three 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 not 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 four 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.

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

Recommendations for Chiropractic Management of Low Back Disorders

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. al. have also recently concluded that manual therapeutic methods, such as spinal manipulation (SMT) and mobilization (MOB) methods, combined with active care/ exercises have been shown to be effective in the management of chronic back pain.⁷

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

The majority of 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

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possible. Efforts should be made to identify those patients less likely to respond to conservative care. Clinicians must continually be vigilant for the appearance of red flags that may arise at any point during patient care. (This last sentence is repeated in the very next paragraph and should be deleted here.)

Efforts should be made to identify those patients less likely to respond to conservative care. 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. Additionally, 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, doctors of chiropractic 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 healthcare, the greatest savings can be realized by keeping healthy patients out of doctor's offices and allowing limited healthcare resources to be utilized by those truly in need of them.

Summary of the Evidence for Chiropractic Management for Low Back Disorders

Summary of conclusions on spinal adjustment / manipulation / mobilization (derived from CCGPP low back literature synthesis):⁵

1. Strong evidence supports the use of spinal manipulation to reduce symptoms and improve function in patients with acute and subacute low back pain.
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 low back pain and radiating leg pain, sciatica or radiculopathy, however, 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. Strong evidence supports the use of spinal manipulation /mobilization to reduce symptoms and improve function in patients with chronic low back pain.

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

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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, sub-acute, chronic, and recurrent, and further subdivided into mild, moderate, and severe.⁵

Acute – Symptoms persisting for less than 6 weeks.

Sub-Acute – 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 the majority of 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 (e.g., co-morbidities, clinical yellow flags, etc.). Depending upon these individualized factors, additional time and treatment may be required in order 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 6-12 visits over a 2-4 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.

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Initial Course of Treatments for Low Back Disorders

The treatment recommendations that follow, 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.

Table 1: Frequency and Duration for Initial (Trial) Course of Chiropractic Treatments

Stage of Condition	Frequency	Duration	Re-evaluate after:
Acute	3x weekly	2-4 weeks	2-4 weeks
Sub-Acute	3x weekly	2-4 weeks	2-4 weeks
Chronic	2-3x weekly	2-4 weeks	2-4 weeks
Recurrent / Flare-up	1-3x weekly	1-2 weeks	1-2 weeks

An initial course of chiropractic treatment typically includes one or more “passive” (i.e. non-exercise) manual therapeutic procedures (i.e. 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 pro-active team and to outline the patient’s responsibilities. While passive care methods for pain or discomfort may be initially emphasized, “Active” (i.e. exercise) care should be increasingly integrated to increase function and return the patient to regular activities.

Re-evaluation and Re-examination

A detailed or focused re-evaluation designed to determine the patient’s progress and response to treatment should be conducted at the end of each trial of treatment.

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

When a patient begins to demonstrate a delay in expected progress (i.e., stalled functional gains), the doctor of chiropractic should reassess and consider other clinically appropriate options, (i.e., other chiropractic methods, outside referral/treatment, diagnostic testing and co-management).

A separate re-examination 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

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alternative therapeutic approach. As with the other healthcare disciplines, there are chiropractic physicians with additional post-graduate 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 re-evaluation should be performed. The purpose of this re-evaluation is to determine whether the patient has made clinically meaningful improvement. A determination of the necessity for additional treatment should be based upon 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 final re-evaluation is recommended to confirm that the condition has resolved or a clinical plateau has occurred and for the practitioner to provide final patient education and instructions in effective self-management.

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 doctor of chiropractic should perform a final examination to verify that maximum therapeutic benefit (MTB) 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 despite residual pain, as well as to avoid catastrophizing and overdependence on physicians, including doctors of chiropractic. They need to be reassured that, "hurt is not the same thing as harm."

The frequency of continued treatment generally depends upon 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.

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Table 2: Frequency and Duration for Continuing Courses of Treatments

Stage of Condition	Frequency	Duration	Re-evaluate after:
Acute	2-3x weekly	2-4 weeks	4-12 treatments
Sub-Acute	2-3x weekly	2-4 weeks	4-12 treatments
Chronic	1-3x weekly	2-4 weeks	2-12 treatments
Recurrence / Flare-up	1-3x weekly	1-2 weeks	1-6 treatments

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 (also sometimes referred to as "maximal 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, measureable 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) has been established.

Outcome Measurement

In order 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 ADL and employment include:

1. Pain scales such as the Visual Analog Scale (VAS) and the Numeric Rating Scale (NRS).
2. Pain Diagrams that allow the patient to demonstrate the location and character of their symptoms.
3. Validated ADL measures, such as the Oswestry Back Disability Index and the Roland Morris 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.

Improvement in validated functional capacity testing, such as lifting capacity, strength, flexibility, and endurance.

Spinal Range of Motion (ROM) Assessment

ROM 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.

Exercise

The CCGPP literature synthesis review authors offered the following conclusions regarding exercise:⁵

1. In acute low-back pain, there is evidence that exercises are not more effective than other conservative interventions. Meta-analysis showed no advantage over no treatment for pain and functional outcomes over the short or long-term.
2. There is moderate evidence of effectiveness of a graded-activity exercise program in subacute low-back pain in occupational settings. The effectiveness for other types of exercise therapy in other populations is unclear.
3. In chronic low-back pain, 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 healthcare settings. Meta-analysis found functional outcomes significantly improved, however, the effects were very small, with a less than 3-point (out of 100) difference between the exercise and comparison groups at earliest follow-up. Pain outcomes were also significantly improved in groups receiving exercises relative to other comparisons, with a mean of approximately 7 points. Effects were similar over longer follow-up though confidence intervals increased. Mean improvements in pain and functioning may be clinically meaningful in studies from healthcare populations in which improvements were significantly greater than those observed in studies from general or mixed populations.

Cautions and Contraindications

Chiropractic care, including patient education, passive and active care therapy, is a safe and effective form of healthcare 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 doctor of chiropractic 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 one or more specialists, and the therapeutic methods being employed by the chiropractic physician.

Contraindications for High-Velocity Manipulation Techniques on the Lumbar Spine (red flags)

- 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
- 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.
- Region of hypermobile joints
- 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)
- Unstable congenital bleeding disorders, typically requiring specialty co-management
- Unstable acquired bleeding disorders, typically requiring specialty co-management
- Inadequate physical examination
- clinicians with inadequately-trained manipulative skills
 - Under certain procedures soft tissue low velocity, low amplitude manipulation or mobilization procedures may still be clinically reasonable and safe.

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 neurological deficit

Conditions Requiring Co-management

- Cancer pain.
- Post-operative 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 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 substantively, progressive infectious condition.
- The patient experiences a medical emergency (e.g., myocardial infarct, cerebrovascular accident, severe laceration, pneumothorax, etc).
- Increasing neurological deficits (i.e. cauda equina syndrome)

Informed Consent

Informed consent is the process of pro-active 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.

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