

# Assuring Chiropractic's Future

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Volumes of research provide evidence that manipulation is safe and effective for certain types of spinal conditions,<sup>1-8</sup> and it is generally recognized that over 90 percent of manipulation is performed by chiropractors.<sup>4</sup> However, because we use many different treatment methods, we have no evidence indicating what methods are most appropriate for specific spinal problems. A given treatment method may demonstrate considerable effectiveness for a specific condition, but this does not indicate its usefulness for another. For example, a patient with spinal stenosis may derive the most benefit from a low-force method, whereas a patient with herniation may benefit most from a high-velocity, low-amplitude procedure. It is unlikely that all chiropractic technique systems are equally effective for all spinal conditions.<sup>9</sup>

Payors, patients, regulators and other health care providers expect chiropractors, as health care professionals, to know what treatments are most effective for particular health problems in particular patients. They also expect us to filter out the ineffective, harmful and costly therapies, and to employ only valid and clinically beneficial procedures.<sup>10</sup> In fact, all of health care is undergoing scientific scrutiny,<sup>11</sup> because no one wants to pay for or use ineffective, unnecessary or overpriced procedures. Furthermore, patients have the right to know the benefits and risks of an intervention, irrespective of a practitioner's opinion.<sup>12</sup> Our challenge is to demonstrate that the benefits of our recommended treatments exceed their risks, and that they are cost-effective.<sup>13</sup> We also have an obligation to show that the treatments we recommend are more beneficial than alternative treatments with similar or even lower risks.

## The Need for Evidence

Practitioners should rely upon their clinical expertise (rooted in a basic-science and/or biological rationale) and the best available clinical evidence when making decisions about patient care.<sup>14</sup> Any of these factors alone is not enough. But the appalling lack of quality evidence regarding chiropractic treatment procedures is impeding the conscientious practitioner's ability to make informed decisions. Many chiropractors are left to make critical clinical decisions based exclusively on input from practice authorities, or their own casual clinical experience and untested theories. While these sources have value and are important within their own context, they are not acceptable substitutes for exact data derived from rigorously designed and implemented studies.

Even though we understand more than our forefathers about basic science topics like biomechanics, physiology, pathology and neurology, we still do not know what types of manipulation or other soft-tissue therapies are most effective.<sup>15</sup> We labor under anecdotal stories passed from one practitioner to the next, because few rigorously designed and implemented studies have addressed the validity and effectiveness of treatment techniques for conditions commonly seen in chiropractic offices.

## Unsupported Claims

Admittedly, technique advocates have made significant contributions to the advancement of chiropractic science, and our profession owes a debt of gratitude to those who have contributed to the organization of clinical protocols and the advancement of sophisticated biological/basic science rationales.<sup>16</sup> But even with these contributions, far too much of what we do and teach remains nonvalidated. Many technique sponsors have proffered sophisticated rationales for their methods, made unsupportable claims and disregarded scientific protocols.<sup>17,18</sup> Moreover, most of these sponsors' publications in peer-reviewed journals have focused on peripheral matters, such as the reliability of diagnostic protocols, and only a few have addressed clinical outcomes.<sup>19</sup>

Statements that a method has been proven with confidential or proprietary research, or has been comprehensively researched privately for years, must be questioned.<sup>19</sup> Those who make these statements usually support their claims with casual observations, rather than valid research findings. That some patients get well using a particular treatment method is not proof of that method's effectiveness, because the natural history of the patients; the unreliability of unblinded biased observers; regression to the mean, co-interventions, nonspecific effects; or numerous other factors could account for such results. Moreover, all chiropractors experience patient improvements and "miracles," regardless of the technique employed.

#### Management Variation and Dose Disparity

Historically, when a new technique is created, it is added to the list of possible interventions without displacing an existing technique.<sup>20</sup> Thus, the number of available interventions has grown out of control. Our profession has over 200 different treatment methods. Because so many are available, there is a sizable variation in the clinical management of patients, and this variation is thought to contribute to the enormous disparity in patient doses of therapy. A recent study revealed that for the management of a specific scoliosis patient, surveyed practitioners would use from zero to 664 office visits.<sup>21</sup> A common reason for the large variation in utilization is that doctors perceive either missing or inadequate evidence and, thus manage by "convictions," leading to less than optimal patient care.<sup>22</sup>

#### Design Issues

Clearly, our profession needs to begin "weeding-out" outdated, ineffective therapies and replacing them with ones that are proven effective. The only way to do this is to conduct studies assessing our treatment methods. The aim of such investigations would be to measure which methods or systems are most effective. The teams conducting these studies should be composed of methodological researchers, statisticians and developers who agree to publish the data, regardless of the findings. Only with this allegiance to the truth can we establish trustworthy information upon which our profession can rely.

The design of a controlled clinical trial of treatment methods might include using valid and reliable health outcome measures with "subluxation/treatment" indicators before, during and after intervention.<sup>23</sup> This would allow for the testing of therapeutic effects. It would also produce a "nested" validity and reliability study - one that could yield information about a system's therapeutic effectiveness and diagnostic accuracy simultaneously, thereby optimizing the utilization of research resources.

In practice, chiropractors use a single technique protocol or a mix of technique protocols. Although we know not all techniques work equally well, we do not know the unique contribution of each

technique to a patient's overall outcome.<sup>9,18</sup> Therefore, investigators in technique studies should consider using a factorial design. This allows for testing the effectiveness of multiple techniques. In factorial-designed clinical trials, patients are allocated to a combination of treatments from zero to the maximum number being tested. This makes it possible to test whether there is independence among the effects of different therapies or a combined effect size. It is also possible to estimate the effect size among the treatment variables.

## Toward a Solution

The following are specific steps practitioners, educators and technique advocates need to take to move our profession toward a solution:

1. Practitioners should urge their technique teachers to test their methods, and they should financially support those efforts. But, most importantly, practitioners should apply the best evidence of the day to obtain maximum results for their patients.
2. Educators and state boards should create and manage a national "clearinghouse" to establish and implement guidelines for analyzing and ranking chiropractic interventions. This organization would make all guidelines and the processes for developing them explicit and open for amendment. It would also provide valuable information regarding interventions to chiropractic colleges, state boards and associations, and practicing chiropractors. These entities could then state that the interventions they teach, endorse and use "meet national clearinghouse guidelines." By establishing this system for categorizing and assessing interventions, we would be elevating the standards of our profession and protecting our patients.
3. Technique advocates should participate in, and devote their resources to clinical trials of treatment techniques. After all, the burden of proving the effectiveness of interventions lies with them. Although these folks may be reluctant to test their techniques in light of the possibility of failure, they have an obligation to the patients of their students - one obligation that supersedes their self-interest.

## Conclusion

There is a growing awareness that untested chiropractic techniques are leading to suboptimal clinical outcomes and that the casual observations supporting these treatments are diminishing our profession's value. As conscientious professionals committed to improving health, we should call for the demonstration of clinical evidence as a key component of health care decision-making. Understanding what technique is superior under the circumstances will refine chiropractic theory and management, and improve patient outcomes.

Can we blame other health care professions for observing chiropractic's shortfalls and stealing our methods and intellectual assets if we continue failing to quantify our profession's best intervention strategies? Can we continue to ignore the need for evidence regarding optimal patient outcomes? Can we put off studying our methods until a more convenient time? Clearly, we cannot.

Chiropractic research is vital to patients and practitioners. We have a duty to evaluate our many therapeutic methods and to examine their value, importance, and usefulness with rigorous methodology - and we need to begin doing so now.

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