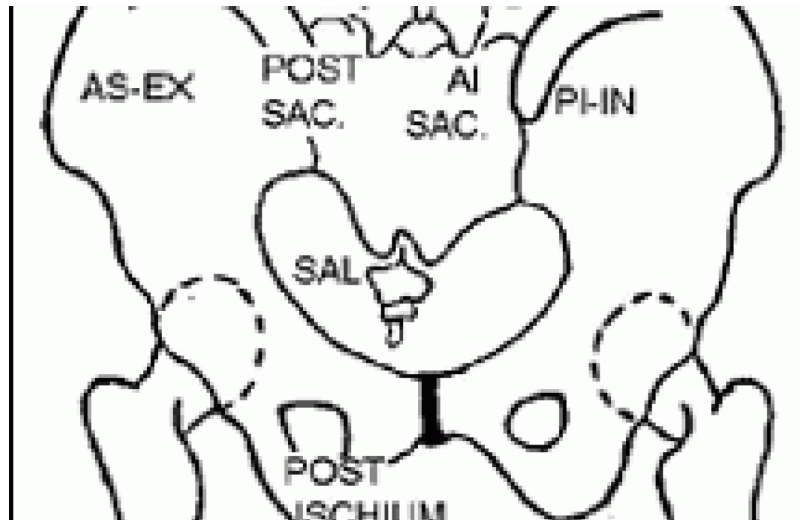


Dynamic Chiropractic



CHIROPRACTIC TECHNIQUES

The Listings Continuum: Driving a Truck through a Paradox

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The Research Agenda Conference VI (RAC VI) in Kansas City will long be remembered as something of a watershed event, certainly by those of us who were lucky enough to be there. Knowing that others would produce accounts of the conference as a whole, we decided to focus on one theme that kept coming up, most explicitly in our own presentations: *Getting a Grip on the Assessment of Manual Adjustment Indicators (Haas) and Skirmishing at the Technique-Research Interface* (Cooperstein).

In chiropractic, the preponderance of research suggests we are justified in maintaining considerable confidence in our treatment success, but not nearly as much in our diagnostic acumen. This, of course, creates a terrible paradox. It is commonly alleged that successful treatment requires an accurate diagnosis. How, then, are we to explain the apparent success of a great variety of chiropractic adjustive procedures, when demonstrated low levels of interexaminer reliability in widely used examination procedures suggests the notion of a specific chiropractic diagnosis (i.e., "listing") may be more wishful thinking than reality? If, as so many have said, a good treatment outcome depends on an accurate diagnosis, how can we explain fairly uniformly good outcomes, given huge variation in diagnostic inputs?

The data derived from the longest-running, largest-scale research project ever conducted by chiropractors, the cumulative result of hundreds of interexaminer reliability experiments investigating practically every analytic/diagnostic commonly used by chiropractors - motion palpation; thermography; manual muscle testing; leg checking; and more - convincingly demonstrate that specific chiropractic listings are often randomly generated, as if in a Monte Carlo experiment. (There are reasons to think it theoretically unlikely, in the case of some of these examination procedures, that a second examiner would get the same listing as a first examiner, but that is beyond our scope to explore in this column.)

This is not a trivial problem. If we do not address this question honestly, or are not prepared to leave aside our "preconceived notions" (another theme that kept coming up at RAC VI), then others

less sympathetic to chiropractic will offer solutions we can't abide: "Chiropractic treatment benefits are all placebo," or "It makes no difference what is done. It's all just a matter of the laying-on of hands."

Apart from leaving us open to derision from outside detractors, failure to address this question has led to chiropractic fratricide - a civil war between the research and technique communities. The technique people (in the colleges and in the field), having noticed that their specific listings led to adjustive procedures that were clinically effective, were furious with researchers who couldn't explain to them just how adjusting off those dang listings got such good results! And the researchers, having grown weary of spending countless and largely unappreciated hours wrestling with the largely unflattering interexaminer reliability data, will no longer accept being "shot" by frustrated clinicians for being the messenger for the bad news: *Listings don't work, even though chiropractic does.*

Although the authors agree this is a central paradox large enough to drive a truck through, our approaches are somewhat different. One of us (Cooperstein) likes making up stuff, while the other (Haas) likes designing research protocols that may rule stuff in or out. At the RAC VI, I offered some observations as to what was going on, based on this and that, while Dr. Haas described a full-bore research protocol that should clarify the clinical impact of motion palpation and the listings it generates - an experimental design that could be used for other procedures as well.

All Techniques Are Equal, but Some Are More Equal than Others

Although most patients are better off after a round of chiropractic care, there are data suggesting that about half of them suffer at least one adverse consequence along the way.^{1,2} Nevertheless, these tended to be minor and transient, and we have every reason to believe that even these patients were made better off than had they received no care at all. Since most patients improve, but some more quickly and with less adverse consequences along the way, perhaps "wrong listings" are not so much wrong as *suboptimal*. This is just what we would expect if, rather than listings being simply right or wrong, there were a *listings continuum* ranging from very appropriate to very inappropriate. Then listings would matter, in the sense that doing the "right thing" would be better than the "wrong thing," although even the wrong thing would usually be better than literally nothing, i.e., no clinical intervention.

Examples are almost too trite to recite, but let us give at least one, the oft-stated "introducing motion" hypothesis. Suppose an innominate bone is listed as an "AS ilium" (we are not worried in this article whether there is any such thing), but the doctor gets that wrong and adjusts it as though it were a "PI ilium." The vector chosen may (however temporarily) make the joint worse off and exacerbate symptoms. A few days later, thanks to the joint having been moved, there is greater range of motion with all the benefits accruing to that. Would it have been better to get the line of drive right? Sure, but what was done was still better than nothing. In other words, if you can't move a frozen engine bolt by attempting to loosen it, then try to unfreeze it by tightening it.

Yet another way of interpreting the concept of a listings continuum has to do with truly acknowledging that the spine functions (and dysfunctions) as an integrated whole. The specific listings, even when we get them right, might amount to the various tips of that holistic iceberg. As the iceberg bobs around on the sea of subluxinogens, with its shifting currents and unexpected exigencies, different tips (listings) get exposed, or become clinically apparent. From an interventionist point of view, we need not obsess on which is the right listing. Even though some approaches may result in a better outcome than others, the global analysis provides a menu of possible interventions, all mechanically consistent, and none likely to do harm. In the figure, the

lumbopelvic distortion seen in the figure is the listing, regional in nature and worth of multilevel intervention. Optimizing the intervention(s) - the preferred avenues of approach - would depend on a series of other considerations, including orthopedic testing, postural assessment, global range of motion, and more.

Segmental Specificity and the abused Surgical Metaphor

It is hard to attend a research or a technique meeting these days and not encounter skepticism about the importance of segmental specificity. Although no one has taken the trouble (or perhaps had the courage) to write the definitive article (nor is this that article), I once heard the title of one crudely described as "specificity, schmecificity" It is an idea whose time has come, not in the form suggested by that title, but in a more refined sense: a segmental problem is very much affected by the global environment in which it occurs; an environment which may not only be more amenable to reliable detection, but a more efficient target for clinical intervention. Regional problems require regional solutions.

What if we just sat down, took a deep breath, and reexamined the whole notion of segmental specificity, that most holy of chiro-words? It is intuitively obvious what that concept might have meant to the founders, both clinically and commercially for the purpose of product distinction, but it just hasn't played out very well. Although we would expect experienced clinicians to not get too hung up on the problem, we have seen the specificity albatross have a major negative impact on chiropractic technique teaching programs. It may also be impacting negatively on the clinical practice of chiropractic, in the form of suboptimal interventions having been inspired by preconceived notions.

At every meeting of the American Back Society, you'll hear that a good surgical outcome depends on the right surgeon, doing the right surgery, on the right patient, at the right time, for the right reason. Unfortunately, some of us have been too quick to extrapolate this metaphor onto chiropractic care, which would supposedly require getting a "specific listing." Students don't see at first that the surgery metaphor is much abused when applied to a manual, conservative care setting. After all, the consequences of a surgeon removing the wrong kidney are not really comparable to a chiropractor adjusting the wrong spinal segment, especially since as a general rule it is not possible to determine the right spinal segment.

Surgery is distinctly noniterative. If removing the gall bladder does not alleviate upper right quadrant pain, no one cavalierly says, "Well, let's remove the liver, and if that doesn't work, we'll switch to the left side of the body and try the heart or spleen." Experienced clinicians know that chiropractic care, by comparison, is inherently iterative. They don't determine the right listings, so much as *converge on them* as the case develops. There's lots of trial and error, a big role for clinical hunches and sometimes "mistakes." Call them suboptimal interventions, since almost all will work in the long run. In short, there is no comparison between the pre-surgical diagnosis and the chiropractic listing.

Chiropractic faculty members adhering to contrary system techniques frequently struggle with one another using the students as a mediation, much of it over specific listings and how to get to obtain them. While these faculty provoke heated argument over the number of angels that can dance on the head of a pin, the students are not given the intellectual and emotional space to ask, "Where's the pin. Where are the angels?" They retreat into a state of existential despair, worrying how they will be able to pick out and afford the *ultimate sublaxometer*.

It would be far more liberating to proffer to the students one of those "bad news, good news" scenarios: The bad news is that we have had a heck of a time coming up with reproducible

segmental examination procedures; the good news is that we are getting a fine outcome nonetheless. Students, you have chosen the right career, so don't stay up all night worrying about how you will ever get the "right listing!" Most chiropractors, addressing the same clinical problem, use a broadly consistent, although far from identical, mechanical approach. Some of your instructors' claims of having gotten it *exactly* right depend on a monopoly of interpretation, the spectacle of authority and the power of grading. Research has certainly not been friendly to the concept of technique instructor infallibility. We are even aware of one motion palpation study³ in which the students were more reliable than their instructors!

Anatomy of a Diagnostic Trial

In the meantime, one of us (Haas) has formulated a research protocol that should cut to the heart of the matter. It will allow us to answer the following question: Does using a particular examination method actually lead to better clinical outcome? The protocol uses a value-free "black-box" approach, in that no assumptions are required for designing the study as to how an adjustive indicator works or what kind of information it provides the clinician (specific or otherwise). The study design is a double-blind, randomized, placebo-controlled, controlled trial (RCT).

When we hear RCT, we usually think of randomly assigning subjects to receive a treatment or a placebo treatment based on a fixed assessment protocol. For our protocol, we do just the opposite. Subjects receive a fixed treatment regimen (adjustment) either based on the listings found with an adjustive indicator in the experimental group, or based on random computer generated listings in the control group. In the control group, the examination itself serves as the placebo since it is not used to determine what adjustments are performed. As in a treatment trial, we evaluate clinical outcomes in a diagnostic trial to determine the efficacy of the procedure under study, in this case an adjustive indicator. If the clinical outcome in subjects is no better for the experimental group than for the control group, then there is no clinical impact of the adjustive indicator. We would infer that using the indicator to make decisions on adjustment would serve the patient no better than guessing where to adjust. Patients improve *in spite of* the adjustive indicator.

On the other hand, if the clinical outcome is better in the experimental group, then we would conclude that the examination procedure is efficacious. This means that the patient is better off for having the examination, the bottom line for chiropractic care. The study results would indicate that the procedure provides useful information for the clinical decision on where and how to adjust. Unfortunately, the study cannot tell us what that information is or how we are really using it successfully in practice; this must wait for biomechanical and neuroscience research. However, if a procedure is efficacious despite the absence of reliability for indicating specific adjustments, the study results would imply that adjustments and their indicators may work in an entirely different manner from how we think. Adjustive indicators dismissed for lack of reliability might merit reconsideration for further study.

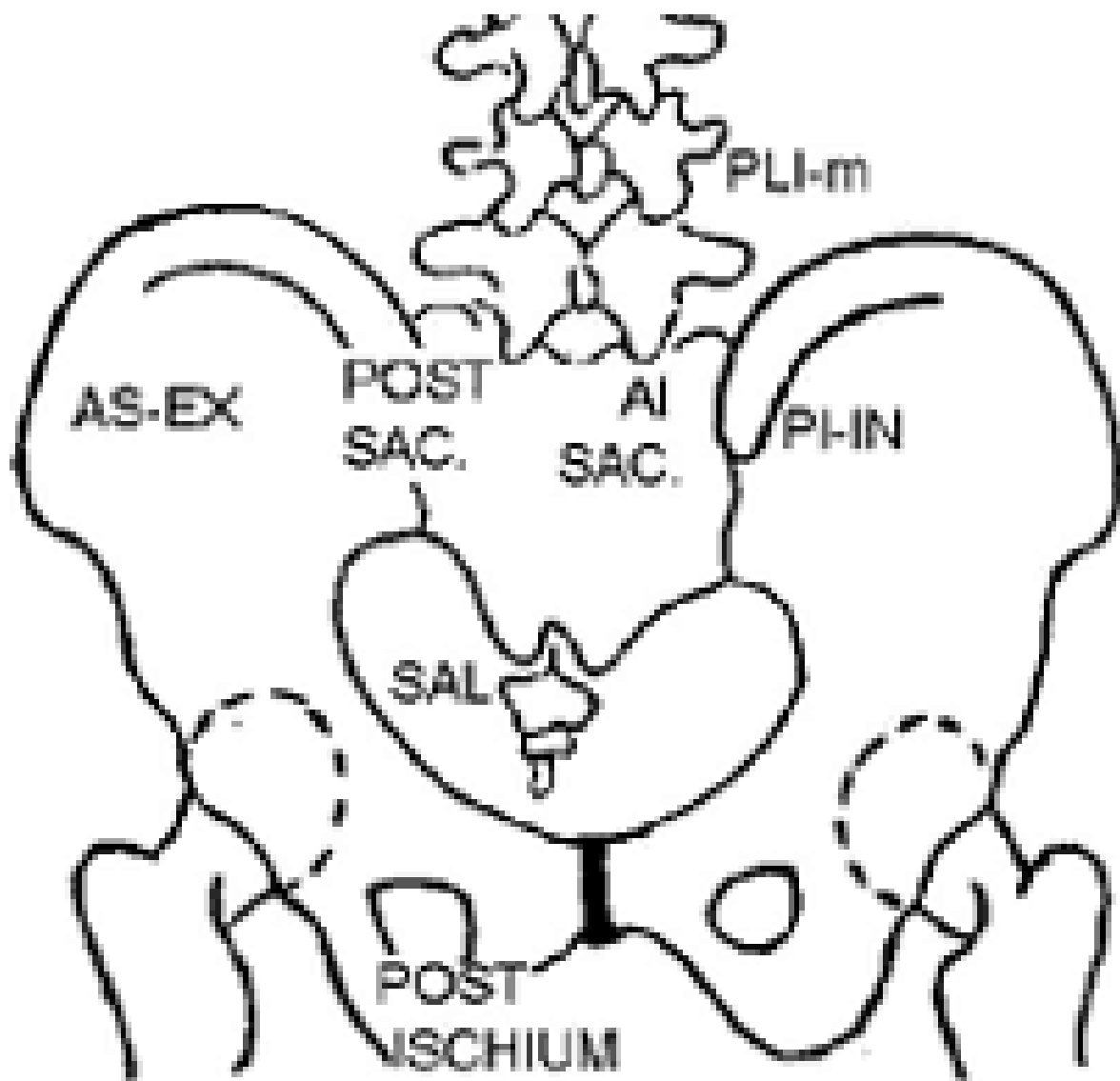


Figure: A lumbopelvis listings continuum: menu of mechanically consistent interventions.

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SEPTEMBER 2001