

Feature Article

AMA's Guides to the Evaluation of Permanent Impairment, 6th edition.

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Introduction

Just released amid the fanfare of a mildly outraged chiropractic community, the AMA's *Guides*, 6th edition, nevertheless promises to be an improvement over the previous edition¹. As we saw with the 5th edition, errors-in some cases, glaring errors-need attention, so expect an errata sheet in the mail soon if you bought your copy from the first printing.

My initial impression of the new edition is that the authors go out of their way to justify their approach, which comprised a modified Delphi panel that relied, when it could, on published works, grading that work in a standard hierarchy of evidence, with meta-analysis of randomized controlled trials (RCT) at the top, followed by RTCs, non-randomized interventional studies, observational studies, and so on. I sensed an ongoing apologetic tone for the failings of earlier editions, with a recurring hopefulness that this edition will rectify some earlier shortcomings. And there is no question that earlier editions had their failings. Does the 6th edition manage to fulfill its destiny? Is it truly a "paradigm shift" as promised? Only time and real field experience will answer that question, although the hackneyed term, paradigm shift, is probably a bit grandiose from what I can see. And, along with admissions that previous consensus-based editions were flawed, the new methodology, they concede, "must await further empirical testing." Fair enough.

By the way, what was it that had the ACA's legal counsel brisling and quickly obtaining the AMA's agreement to make some editorial changes

and to send out errata to owners of early editions? The language of the text sounded occasionally discriminatory. The *Guides*, it was said, "were written by medical doctors for other medical doctors." In another section it was said that chiropractors should be limited to issues of the spine. These were discriminatory in my view, and patently wrong in the case of limiting us to the spine, so kudos should go to the ACA for their quick action. I hope this inspires non-members to join the ACA. It needs everybody's support.

None of the Contributors to this edition of the *Guides* were DCs, although there were some DCs listed as Reviewers. (One wonders whether any of them grouched over the aforementioned discriminatory language.) The *Guides* now incorporate the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) and, as elsewhere, the authors went to great lengths to point out the advantages of this thinking, although, at least from the standpoint of the spinal rating sections, its relevance is somehow obscure. In any event, here is how the new system shakes out.

All of the impairment areas share a generic template which has five classes of impairment (0-4). The percentage impairment is based initially on these classes and varies with the diagnosis. In this sense, the system resembles the old 5th edition DRE classes. But, unlike the old system, we now have severity grades A through E, with A being the least severe and E being the most severe. These levels determine the variability within the classes of severity. These levels are determined by algebraically subtracting the class number from a number related to grade modifiers for functional history, the physical examination, and clinical studies.

No more DRE. Now we have diagnosis-based impairments (DBI) and they even have one that includes whiplash. Note also that pain-related impairments (PRI) can be made when DBI are not available or appropriate. The authors of this PRI chapter willingly accept and discuss the controversy of this practice. Some experts discourage PRI, others believe it is a necessary adaptation. In any case, the lengthy discussion in this chapter is fairly moot since the maximum rating for pain is capped at 3% WPI. One simply doesn't get much credit for pain without a more objective DBI. So let us not skip ahead to Chapter 17, the **Spine and Pelvis** and take a look under the hood.

In the interest of brevity, I will only discuss the cervical spine here. The other spinal levels are similar in terms of the mechanics of the rating

Note that range of motion is no longer used since, according to the authors, it is not a reliable indicator of pathology or functional status. That is not precisely true in the context of whiplash. Outcome studies have directly correlated ROM with recovery, and others have shown that initial ROM predicts outcome as well. For once, though, I'll avoid tangential discussions.

The first thing to do in the cervical impairment rating is to choose the appropriate impairment class or DBI. For the cervical spine there are 7. These comprise (1) the non-specific chronic or chronic recurrent neck pain (including whiplash), (2) alterations of motor segment integrity (AOMSI) and disc herniation, (3) pseudarthrosis (which relates only to postoperative conditions), (4) spinal stenosis, (5) fractures, (6) dislocations and fracture/dislocations, and (7) postoperative complications (e.g., deep wound infections, chronic osteomyelitis, etc.).

Once you have settled upon a DBI, then you choose the appropriate class (0-4). For example, in the case of chronic neck pain due to whiplash or strain/sprain injury, only class 0 and class 1 are available. Class 1 allows, normally, for a range of whole person impairment (WPI) of 1% to 8%, but in the case of chronic neck pain, no more than 3% can be assigned. That is also the cap based on the PRI, so it is at least logical, if questionable on clinical grounds and real world experience.

The next order of business is to consider the modifiers or the "adjustment grid." There are three for the spine and they include functional history, physical examination, and clinical studies. Each of these has 5 modifier levels which correspond to no problem (0), mild problem (1), moderate problem (2), severe problem (3), and very severe problem (4). For each of these, examples are provided in tables. For example, a functional capacity level 2 would imply pain and symptoms with normal activity. In the case of functional capacity one can also utilize the pain disability questionnaire (PDQ), which is provided in the *Guides* as an appendix. It is also permissible to use an "alternative validated assessment," although none others were specifically mentioned that relate to the cervical spine. One that would probably be acceptable would be the neck disability index (NDI). Examples of physical examination modifiers include the SLR test, sensory changes, reflexes, etc. Examples of clinical studies modifiers include needle EMG or imaging studies, although, if the imaging study was used to place the person in the DBI (e.g., MRI to diagnose disc lesion) it cannot be used again as a modifier.

Finally, the number corresponding to the DBI class is subtracted from each modifier number and the three values obtained in this way for the three modifier classes are algebraically summed. If the sum is equal to 0, then there is no net movement within the class. If the sum is 1, the severity within the class is increased one increment. If the number is negative, the severity is decreased. Take class 2 in the cervical spine as an example. It carries a potential WPI of 9-14% across all 7 of the DBIs (with the exception of chronic neck pain for which only class 0 and class 1 are possible). This range, 9-14, is represented by the letters A-E. One starts in the middle of the range, C, which, in the case of the class 2 category, corresponds to 11% (9 10 11 12 14). Mathematically minded persons might point out that the only way 11 could be right in the middle would be if one were to omit the 13, which they did, for reasons that are not clear. In any case, 11 (or C) is the default value. If the sum of the modifiers is 2, then you move two places to the right and go from a C severity rating to an E. No matter what the modifier number is, however, you never migrate out of the original class: these modifiers can only reduce the severity as low as A or increase it as high as E.

Sounds simple, right? Well, apparently it wasn't that simple for the authors. They were, apparently, mathematically challenged and couldn't seem to reliably follow their own game plan. For the benefit of those of you who plopped down your \$170 for this new tome, I will point out a few errors here. And, because I am a certified dyslexic myself, I confess to feeling hypocritical in pointing out the typos of others, I would also make no guarantee that I spotted all the errors. In Figure 17-6 there is an illustration of how one is to determine lumbar motion segment abnormality, with an algebraic summing of (+8)-(-8) equaling 26. The minus value should have been -18. On page 586 the authors provide an example of this business of subtracting the DBI class from the three modifier values and come up with a 0. But their math was wrong and it should actually have been -2, which would have made the thing an A instead of a C. Another addition error appears on the next page with a -1 and 1 summing incorrectly to 2. (One wonders how these rather glaring errors escaped the notice of the Reviewers.)

An important feature of the new *Guides* is the figuring of AOMSI. In the cervical spine, as in the past, one can have a translation of greater than 20% of the AP diameter of the body of the vertebra above, measured on either flexion or extension radiographs. Notice the word "or." I have, in the past, debated with many in this profession and the medical profession-including several radiologists-over this methodology. I point out that the original study by White et al., from which this measuring of AP translation was derived made it clear that

one was not to add the anterior translation to the posterior translation, but rather to use one or the other, whichever is greater². But some clinicians still incorrectly add anterior and posterior translation together.

At first blush, it appeared that the authors of the *Guides* have tried to clear this confusion in the 6th edition. But did they? Under a section titled **Cervical Spine AOMSI**, they describe the 20% method just mentioned and then inform us in that, "(Figures 17-5 and 17-6 describe [a] similar technique for [the] lumbar spine.)" In Figure 17-5, however, they illustrate a lumbar spine and describe the AP translation mensuration method introduced in the 5th edition in which greater than 2.5 mm for the thoracic spine, greater than 4.5 mm for the lumbar spine, and greater than 3.5 mm for cervical spine all indicate segmental instability or AOMSI. It was the greater than 3.5 mm of translation in the cervical spine that put you into a DRE IV category which carried a 25-28% WPI in the 5th edition. So, some ambiguity remains after all. Did they intend to remove the cervical portion from the caption of Figure 17-5, or did they simply fail to describe this method under the **Cervical Spine AOMSI** section? One thing that is clearly different in the 6th edition is that this greater than 3.5 mm translation finding is only worth a class 2 rating (4-8%) if there was a radiculopathy at that level and has resolved, or a class 3 rating (9-14%) if there is an ongoing radiculopathy at that level. So the value of the finding has been significantly downgraded.

The 11 degree angulation rule from the 5th edition-also given to us by White et al.-remains with us in the 6th edition as an indicator of instability. Alternatively, there can be a loss or near-loss of motion due to developmental fusion or successful or unsuccessful surgical fusion intervention.

The authors stated, incidentally, that AOMSI is to be measured only by "plain film radiographs." This statement may have been leveled at users of videofluoroscopy or upright MRI bending studies. Of course, VF is radiography, so as long as one can capture high quality images at the extremes of motion, the other differences between plain film radiography and C-arm VF are irrelevant since the 20% AB measurement is a simple ratio and thus unaffected by differential magnification. Will that argument fly in court? Not always, I'm sure.

An interesting and utilitarian admonition was that, "Judicial decisions state that arbitrary and dogmatic opinions, even from well-qualified experts are not held to be credible. Therefore doctors providing IMFs

and expert testimony must be aware that their opinions must be supported by scientific evidence or they risk losing credibility." I applaud the editors for that sage advice and I imagine I will be quoting it often, since opposing experts I frequently deal with are so fond of scientifically bereft dogma. Probably the most famous myth in musculoskeletal medicine is the one that holds that "most soft tissue injuries resolve in 6-12 weeks." I have yet to find a valid scientific study that supports that statement, especially within the context of whiplash.

Another potentially useful comment, mentioned in Chapter 17, was this one: "Common conditions related to degenerative changes in the spine, including abnormalities identified on imaging studies such as annular tears, facet arthropathy, and disc degeneration, do not correlate well with symptoms, clinical findings, or causation analysis and are not ratable according to the *Guides*." This, of course, can be used to counter the common practice of rejecting or marginalizing injury claims based on pre-existing pathology.

In the end, the *Guides* are new and improved, although "Paradigm Shift" overstates things a tad. From a practical standpoint, I think the *Guides* are not particularly helpful in personal injury. The notion of whole person impairment (WPI) is useful within the context of the workers' compensation system in which the key players-workers' compensation judges, lawyers, doctors, and disability raters-all understand the actual meaning and impact of these numbers. For the lay public at large, however, a 10% WPI is not going to sound very impressive at all. And it is unlikely that the concept of WPI can be effectively explained to a lay jury. Using it may thus unfairly marginalize a patient's claim. And, while most jurisdictions in the U.S. do not use the *Guides* for matters of personal injury litigation, it is interesting to note that the authors mention that the province of Ontario adjudicates personal injury claims using the *Guides*, as do doctors in New Zealand and many parts of Australia. And the new *Guides* even feature a DBI that mentions "whiplash" by name. Are we headed in that direction? I suspect there may be a push in that direction. In the meantime, I find the *Guides* useful in some respects and do measure plain films for evidence of instability. I don't apply the impairment rating, but I will make note of instability that is incorporated within the framework of the AMA's *Guides*.

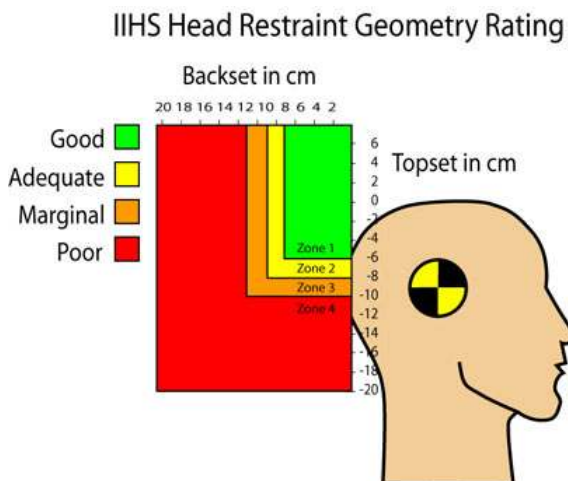
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New HR Study



New IIHS Study Shows that Neck Injuries are Reduced in Cars with Good HR

In a large joint study using State Farm and Nationwide claims data from the years 2005 and 2006, the Insurance Institute of Highway Safety (IIHS) recently reported that the claims rate in cars with head restraints rated "good" by the institute was 15% lower than the rate among the passengers of cars with "poor" rated restraints. When they considered the more severe type of whiplash, in which long-term symptoms were present, the reduction was even more dramatic at a 35% reduction.

By itself this is an important finding for several reasons. For one thing, it underscores the importance of the IIHS head restraint rating. Recall that the static geometry rating test, instituted in 1995, had a dynamic sled test component added to it in the year 2004. This dynamic test uses a BioRID dummy and is undertaken only if the seat gets and initial static geometry rating of "acceptable" or "good." If the initial rating is "marginal" or "poor," no dynamic test is conducted. As of this year, in order to qualify for the institute's coveted "Best Pick" award, among other things, the car must receive a good head restraint rating and about 17 cars failed to achieve the rating simply because of failing the head restraint component. This obviously stimulates the automakers to make hasty improvements. And experience shows that they do.

Recall that I recommend looking at the IIHS website for the car's rating (www.iihs.org). I also recommended applying the "subject-specific IIHS HR rating protocol." This is done by photographing the patient in the car with HR geometry as it was at the time of the crash and then using the IIHS HR rating diagram to make your determination of the static HR geometry. (If you need a copy of that diagram, email me.)

Another reason this report is important is much more subtle. The report offers compelling evidence that these injuries are real rather than being merely a manifestation of disingenuous and widespread opportunistic fraud. To this extent, the industry has inadvertently exposed its corporate façade a wee bit. Consider, for example, the logic. If outright fraud motivated a significant proportion of whiplash claims--which clearly seems to represent the insurance industry's majority view, since their standard defense is to start out denying the veracity of the claims--then improving seat designs and head restraint geometry would not be expected to have any effect at all. In other words, if in most claims nobody is really ever injured in the first place, how could a safety improvement designed to reduce injuries make a difference? The fact that there was an effect is clear evidence that at least a substantial proportion of these injuries are, in fact, real.

If you would like a copy of this report, or the HR diagram image above, just email your request to me at arthur.croft59@gmail.com.

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We sincerely hope that you enjoy our *SRISD Update* newsletter. Look for more helpful hints, inside information, critical facts, and lots of handy free tools in future newsletters. I am a firm believer in the win-win philosophy. And I would encourage everybody to forward this newsletter to others who might benefit from it and encourage them to subscribe. With 3 million whiplash injuries every year, the troubled waters of PI should never stand in the way of necessary healthcare. SRISD provides the infrastructure and tools for progress.

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A handwritten signature in black ink, appearing to read 'Arthur C. Croft'.

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