

**CHAPTER V: MANIPULATIVE AND BODY-BASED THERAPIES:  
CHIROPRACTIC AND SPINAL MANIPULATION**

The Safety of Chiropractic

Lets talk about the safety issue, just for a second. Cervical manipulation, particularly, not so much lumbar manipulation, has been associated to some extent with some rather serious sequelae. In some cases, these problems, which are neurological in nature and are related to the cerebrovascular system—the arteries that come out of the top of the spine and circle around the neck before they go into the brainstem—may result from the type of adjustments or manipulations that are delivered in the upper cervical spine. There are case reports in world literature, dating back to about 1925. In fact, the Rand Corporation, in 1998, did go back in all of the English language literature, back to about 1925, and found 118 cases that could have been, don't know for sure, related to spinal manipulation. Among those cases, 21, unfortunately, led to death, 43% resulted in major neurological impairments, and about a 1/3 had basically good outcomes. But we know that in all the randomized trials—there are more than 90 randomized controlled trials now—since about 1970 on manipulation, there's hasn't been a single case reported, not even one.

Here, a review of complications of lumbar manipulation indicated 29 cases found since 1911. Then there's one study—probably the best and most controlled study that has been conducted so far—over a 10-year period in Denmark, between 1978 and 1988, that reported 4 serious complications and 1 fatality. This, of course, is a very serious consideration for my profession. It's a very important consideration for the public. It's a very important consideration for everybody that cares. We take it very seriously. We've looked at the type of rates that these figures would represent, to get an idea of what the risk really is. When Rand put these numbers together, they took the known cases and multiplied them by 10, to try to compensate for probably what are unreported cases in the scientific literature. So what was there, they took, multiplied it by 10, and then compared it with the number of patients and number of manipulations delivered, actually within a

year. You'll see here that for a vertebral basilar accident or other, the rate is about 5 to 10 in 10 million manipulations; for a major neurological impairment, the rate is 3 to 6 in 10 million; and for a fatality, it's less than 3 in 10 million. For the most serious complication of the lumbar manipulation, these are all complications of cervical spine; this is for the lumbar spine. This rate is so low, 1 in about 100 million, that it's almost unable to be counted, in fact.

Now, these rates don't mean much to you, probably, unless you are able to put them in some sort of context. The one that I'm going to use tonight is actually on the next slide. Before I get to that, though, let me just say that there are some real challenges in determining safety for an event that actually is very rare. First of all, we only have case reports and case series available to us to look at. We don't know how many might go unreported and, undoubtedly, there are some. So, we don't know the numerators and we don't know the denominators, about what's going on, that allow us to calculate what the true risk really is. Furthermore, we don't really, at this point, understand the biological mechanism of how injury might even occur, although there are a number of theories out there.

But when we put this in some sort of context, you can see that it's important to understand that the nonsteroidal anti-inflammatory medications, even some of the new ones out there that were supposed to protect the stomach, are not looking quite as safe as they might have originally. But in patients with osteoarthritis, there are at least 3200 deaths per year, which represents a 0.04% risk. There is an odds ratio of 2.74 for a serious GI event in one study, and in another study by Roth, 2600 deaths and 20,000 hospitalizations per year. Rand also calculated the rate of GI events, which are hospitalizations or fatalities due to serious GI bleeding—bleeding in the stomach. This was—somewhere between 390 and 3200 people per million in 1 year—with people over age 65 at a much greater risk for this sort of condition. We all take nonsteroidal anti-inflammatories, I took some this morning myself, as a matter of fact. We don't worry about this too much, although we probably should. This is an important fact and we need

to look at these facts. The risk of manipulation is an important thing and we are actually looking at it biologically as well. So that gives you an idea of the context of that.

Now I can turn to what we do about that, which is look for the appropriate clinical indications, look for the appropriate patient, and then look for the appropriate expertise. There's at least one case that I can tell you about where a gentleman decided he was going to adjust his own neck, which I can tell you is probably not a good thing to do. In his case, it certainly was not.