

## EDITOR'S PAGE

# Spin kills science

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Have you ever wondered why so much published research in the area of spinal cord injuries (SCI) has positive conclusions? Simple probability tells us that these results are not reflective of the full truth. Researchers can't possibly be picking winners every time they tackle a question. So what is going on here? The most likely explanation for the high proportion of positive conclusions is that many researchers are putting a positive spin on the conclusions of their negative research. Spin is rampant in all areas of medical research and SCI research is no exception.<sup>1-4</sup>

Spin puts negative findings in a more palatable way to editors, journals, patients, funders and readers. There are many ways to do this<sup>4</sup> (see Boutron *et al.*<sup>1</sup> for a systematic evaluation of different forms of spin). For example, in negative or underpowered clinical trials, authors can emphasize the within-group differences or claim that both interventions are equally effective. Alternatively, trivial findings can be exaggerated by expressing data as percentages or talking about relative risk reduction rather than absolute risk reductions. Spin can be seen when one or two trivial positive findings from many, many outcomes and endpoints are focused upon; these are findings that chance alone would explain. Spin comes in many shapes and sizes and often goes unnoticed by the novice reader. It is also surprising how often spin goes unnoticed by authors of systematic reviews and clinical practice guidelines. These authors unwittingly duplicate spin. The end result is heightened legitimacy to treatment approaches which are not founded in high quality evidence.

So why the spin? Why isn't science impartial? Much has been written about these issues.<sup>1</sup> Some argue that spin is just the consequence of the highly competitive and commercial system we all work within. That is, there are many rewards for researchers who report positive findings. For example, their research is more likely to be published<sup>5,6</sup> and cited. They will be able to lay claim to making new discoveries. They will be more likely to receive future grants. All of these factors help progress an individual's career and reputation and give legitimacy to their work. This is however perhaps a fairly cynical view of science and researchers. Surely researchers are not quite so self serving. The far more likely explanation is that researchers are blinded by their own passion. Passion is usually accompanied by devotion, optimism and loyalty to one's profession. These qualities lead to an overwhelming desire to help people with SCI and to prop up the legitimacy of different professions and treatment approaches. These qualities are all admirable but dangerous if left unchecked. They do not foster impartial science. Instead, they foster a burning desire to demonstrate that treatments researchers believe in are effective. This then manifests itself in spin.

Readers, reviewers, journals, funders, clinicians and authors are not innocent bystanders to spin. They all can inadvertently encourage spin or naively turn a blind eye to it. Real science, the science that opens new doors and closes old ones, requires researchers and communities with no vested interests in a 'right answer' and no burning desire to prove one intervention works better than another. It requires researchers that are not under pressure to claim new elaborate solutions and therapies where none exist. However, more than anything, real science requires educated debate and an unbiased and balanced reporting of research by authors just as willing to conclude that an intervention is ineffective as they are to conclude that an intervention is effective. This alone will progress the care of people with SCI.

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