

Watch out for hype—science 'spin' prevalent, researchers warn

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'Spin' in biomedical literature is used to distort the interpretation of results or mislead readers so that results are viewed more favourably. Credit: Hilda Bastian, Statistically-Funny.blogspot.com, CC-BY

More than a quarter of biomedical scientific papers may utilise practices that distort the interpretation of results or mislead readers so that results are viewed more favourably, a new study, publishing on September 11 in the open access journal *PLOS Biology*, suggests.

Researchers Kellia Chiu, Quinn Grundy and Lisa Bero from the University of Sydney Charles Perkins Centre and Faculty of Pharmacy performed a [systematic review](#) of 35 published academic studies that

had previously analyzed so-called 'spin' in biomedical [scientific papers](#) - also known as 'science hype'.

Their findings suggest that more than 26 percent of papers identified as systematic reviews or meta-analyses contained spin. This figure rose to up to 84 percent in papers reporting on nonrandomised trials.

While spin was variably defined across the 35 studies, a wide variety of strategies to spin results were identified including:

- Making inappropriate claims about statistically non-significant results
- Making inappropriate recommendations for [clinical practice](#) that were not supported by study results
- Attributing causality when that was not possible
- Selective reporting, such as emphasising only statistically significant or subsets of data in the conclusions
- Presenting data in a more favourable light than was warranted, for example writing overly optimistic abstracts, misleadingly describing the study design and underreporting adverse events.

Of the 35 studies reviewed, 19 examined whether particular factors (e.g. conflicts of interest, funding) were associated with the presence of spin - however the factors were considered too wide-ranging and unrelated to draw conclusions.

Most of the factors also focused on the characteristics of the individual scientists, journals or studies rather than broader issues in the sector, said co-author Professor Lisa Bero. "The contribution of research incentives and reward structures - for example financial and reputational - that rely on 'positive' conclusions in order to publish and garner media attention is yet to be addressed," she said.

"We see an urgent need for further research to determine the institutional or cultural factors that could contribute to such a high prevalence of spin in scientific literature - and to better understand the potential impact of spin on research, clinical practice and policy."

Researchers, peer reviewers and editors have a responsibility to remain vigilant for spin, said lead author, Kellia Chiu. "The scientific academic community would benefit from the development of tools that help us effectively identify spin and ensure accurate and impartial portrayal and interpretation of results," Chiu said. "Publishing data alongside multiple interpretations of the data from multiple researchers is one way to be transparent about the occurrence of [spin](#)."

More information: Chiu K, Grundy Q, Bero L (2017) 'Spin' in published biomedical literature: A methodological systematic review. *PLoS Biol* 15(9): e2002173. doi.org/10.1371/journal.pbio.2002173

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