

**Spin in the Abstracts of Meta-Analyses and Systematic Reviews:
Midshaft Clavicle Fractures**

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Purpose: Spin is a reporting bias that misrepresents research. Ultimately it can impact surgeon decision-making and patient care. Midshaft clavicle fractures are common; however, debate continues over optimal treatment modalities. The purpose of this study is to identify the prevalence of spin in meta-analyses and systematic review abstracts regarding the treatment of midshaft clavicle fractures.

Methods: Electronic libraries (MEDLINE, Embase, Web of Science, Google Scholar) were systematically searched for meta-analyses and systematic reviews regarding the treatment of midshaft clavicular fractures. The nine most severe types of spin commonly found in abstracts were used as an evaluation tool to assess the articles. Other variables analyzed include year of publication, journal impact factor, number of citations, and methodologic quality according to A Measurement Tool to Assess Systematic Reviews (AMSTAR 2).

Results: The electronic database search resulted in 401 articles, of which 53 met our inclusion criteria. After review of these papers, it was found that 47.2% (25 of 53) of the included articles contained spin within the abstract. Of the nine most severe types of spin found in abstracts, type 3 spin (selective reporting of or overemphasis on efficacy outcomes or analysis favoring the beneficial effect of the experimental intervention) was found to be the most prevalent (12 of 53, 22.6%). Further analysis showed that there was no significant correlation between the presence of spin in a manuscript and its AMSTAR 2 grade, year of publication, number of citations, or the impact factor of the journal in which the manuscript was published.

Conclusion: This study demonstrated the presence of spin in a significant portion (50%) of meta-analyses and systematic review abstracts pertaining to midshaft clavicular fractures. Orthopaedic surgeons should learn to recognize spin as they review articles when deciding the treatment course for such injuries. Additionally, strict criteria should be considered to reduce the prevalence of spin in orthopaedic literature.