

Conflict of Interest Bias

Conflict of Interest (COI) Bias refers to a systematic distortion in research, interpretation, or decision-making that arises when an individual or organization has competing interests—often financial—that may influence their objectivity or integrity.

Definition

A **conflict of interest** exists when professional judgment concerning a primary interest (such as patient welfare or validity of research) may be influenced by a secondary interest (such as financial gain, academic promotion, or personal relationships).

Sources of COI Bias

- Industry funding of clinical trials
- Authors holding stock or patents related to the intervention studied
- Editorial board members promoting their own research
- Undisclosed consultancy or advisory roles
- Sponsorship of continuing medical education

Manifestations

- Favorable reporting of study outcomes
- Selective outcome reporting
- Underreporting of adverse effects
- Biased interpretation in discussion or conclusions
- Skewed meta-analyses due to sponsored studies

Examples in Neurosurgery

- A neurosurgeon promoting a surgical implant from a company in which they hold equity
- Biased trial results favoring devices produced by the study sponsor
- Conflicted guideline panels issuing weak recommendations based on low-quality evidence

Detection and Management

- Full and transparent disclosure of all financial ties
- Independent peer review
- Use of conflict-free guideline panels
- Pre-registration of protocols and outcomes
- Critical appraisal of funding sources in systematic reviews

Related Terms

- [publication_bias](#)
- [sponsorship_bias](#)
- [selective_reporting_bias](#)
- [financial_conflict_of_interest](#)

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